

UNITED STATES PATENT AND TRADEMARK OFFICE

Examiner: Group: Attorney Docket # 1989

Applicant(s) : DE BLOCK, P., ET AL

Serial No. :

Filed :

For : WIPER BLADE FOR CLEANING WINDOWS OR
GLASS, IN PARTICULAR OF MOTOR VEHICLES

SIMULTANEOUS AMENDMENT

January 28, 2002

Honorable Commissioner of Patents and Trademarks
Washington, D.C. 20231

S I R S:

Simultaneously with filing of the above identified application
please amend the same as follows:

In the Claims:

Cancel all claims without prejudice.

Substitute the claims attached hereto.

REMARKS:

This Amendment is submitted simultaneously with filing of the above identified
application.

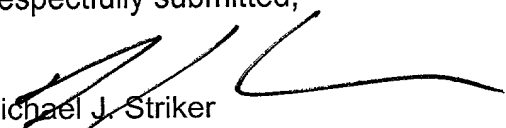
With the present Amendment applicant has amended the claims so as to eliminate
their multiple dependency.

Consideration and allowance of the present application is most respectfully
requested.

10/048202

JG13 Rec'd PCT/P10 28 JAN 2002

Respectfully submitted,



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202240-20284007

Claims

1. A wiper blade for cleaning windows, in particular of motor vehicles, having a band-like, elongated, spring-elastic support element (12), whose lower band surface (13) oriented toward the window (22) has an elongated, rubber-elastic wiper strip (14), which can be placed against the window, disposed on it so that the longitudinal axes of these two parts are parallel and whose upper band surface (11) has a wind deflection strip (42) disposed on it, which extends in the longitudinal direction of the support element (12), is provided with an attack surface (54) oriented toward the main flow of the relative wind, and is made of an elastic material, characterized in that the wind deflection strip (42, 142, 242) has two diverging legs (44, 46), viewed in cross section, which are connected to each other at a common base (48) and whose free ends oriented toward the window (22) are supported on the wiper blade (10), and an attack surface (54) is embodied on the outside of the one leg (44).

2. The wiper blade according to claim 1, characterized in that the upper band surface (11) of the support element (12), in its middle section, the wiper blade part (15) of a device, which is for connecting the wiper blade (10) to a reciprocally driven wiper arm (16), is supported, that an end cap (38) is respectively disposed at both ends of the support element (12), and that a section (40) of the wind deflection strip (42) is disposed between each respective end cap (38) and the device piece (15).

3. The wiper blade according to [one of claims 1 or 2] claim 1, characterized in that the profile of the cross section is the same over the entire length of the wind deflection strip (42).

4. The wiper blade according to claim 1, characterized in that the two legs (44, 46) of the wind deflection strip (142 or 242) are connected to each other by means of a wall (144 or 244) in the vicinity of the two wiper blade ends.

5. The wiper blade according to claim 4, characterized in that the wall (144) is aligned essentially perpendicular to the support element (12).

6. The wiper blade according to claim 4, characterized in that the outside (246) of the wall (244) encloses an acute angle (α) with the support element (12).

7. The wiper blade according to [one of claims 4 to 6] claim 4, characterized in that the wall (144 or 244) is provided with a recess (146 or 246) that is open at the edge oriented toward the window (22) and the width (148) of this recess is greater than the width (150) of the wiper strip (14) in the vicinity of the support element and its depth (152) reaches to the upper band surface (11) of the support element (12).

8. The wiper blade according to [one of claims 1 to 7] claim 1, characterized in that the free leg ends (50, 52) of the wind deflection strip (42, 142, or 242) are attached to the wiper blade (10).

9. The wiper blade according to [one of claims 1 to 8] claim 1, characterized in that the free leg ends (50, 52) of the wind deflection strip (42, 142, or 242) are glued to the wiper blade (10).

10. The wiper blade according to [one of claims 1 to 9] claim 1, characterized in that the free leg ends (50, 52) of the wind deflection strip (42, 142, or 242) are attached, preferably glued, to the support element (12) of the wiper blade (10).

11. The wiper blade according to [one of claims 1 to 10] claim 1, characterized in that the free leg ends (50, 52) of the wind deflection strip (42, 142, or 242), at least in sections, are provided with claw-like projections (56, 58), which suitably encompass the mutually opposed outer edge strips (36) of the support element (12).

12. The wiper blade according to claim 11, characterized in that the claw-like projections extend from the leg ends (50, 52) into the vicinity of the wall (154 or 254), and suitably encompass end regions (112) of the support element (12).

13. The wiper blade according to [one of claims 11 or 12] claim 11, characterized in that the glued attachment is produced in the vicinity of the claw-like projections (56, 58).

14. The wiper blade according to [one of claims 11 to 13] claim 11, characterized in that the claw surfaces (60) resting against the upper band surface (11) of the support element (12) have a greater width (62) than the claw surfaces (64) engaging the lower band side (13).

15. The wiper blade according to [one of claims 1 to 14] claim 1, characterized in that attack surface (54) of the wind deflection strip (42, 142, or 242) is embodied as a flute on the outer wall of the one leg (44).

16. The wiper blade according to [one of claims 2, 3, and 8 to 15] claim 2, characterized in that the end caps (38) are provided with a flute (68), which extends in the projection of the flute of the attack surface (54) of the wind deflection strip.

17. The wiper blade according to [one of claims 2 to 16] claim 2, characterized in that the wiper blade part (15) of the connecting device is provided with a flute (70), which extends in the projection of the flute of the attack surface (54) of the wind deflection strip (42).

18. The wiper blade according to [one of claims 1 to 17] claim 1, characterized in that the hardness of the material for the wind deflection strip (42) is at most 40 percent greater than the hardness of the material for the wiper strip (14).

19. The wiper blade according to [one of claims 1 to 17] claim 1, characterized in that the hardness of the material for the wind deflection strip (42, 142, or 242) is at most 20 percent greater than the hardness of the material for the wiper strip (14).

20. The wiper blade according to [one of claims 1 to 19] claim 1, characterized in that the wiper strip (14) has a Shore hardness A of between 64 and 71, in particular 68, and the wind deflection strip (42) has a Shore hardness A of between 70 and 78, in particular 72.

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Claims

1. A wiper blade for cleaning windows, in particular of motor vehicles, having a band-like, elongated, spring-elastic support element (12), whose lower band surface (13) oriented toward the window (22) has an elongated, rubber-elastic wiper strip (14), which can be placed against the window, disposed on it so that the longitudinal axes of these two parts are parallel and whose upper band surface (11) has a wind deflection strip (42) disposed on it, which extends in the longitudinal direction of the support element (12), is provided with an attack surface (54) oriented toward the main flow of the relative wind, and is made of an elastic material, characterized in that the wind deflection strip (42, 142, 242) has two diverging legs (44, 46), viewed in cross section, which are connected to each other at a common base (48) and whose free ends oriented toward the window (22) are supported on the wiper blade (10), and an attack surface (54) is embodied on the outside of the one leg (44).

2. The wiper blade according to claim 1, characterized in that the upper band surface (11) of the support element (12), in its middle section, the wiper blade part (15) of a device, which is for connecting the wiper blade (10) to a reciprocally driven wiper arm (16), is supported, that an end cap (38) is respectively disposed at both ends of the support element (12), and that a section (40) of the wind deflection strip (42) is disposed between each respective end cap (38) and the device piece (15).

3. The wiper blade according to claim 1, characterized in that the profile of the cross section is the same over the entire length of the wind deflection strip (42).

4. The wiper blade according to claim 1, characterized in that the two legs (44, 46) of the wind deflection strip (142 or 242) are connected to each other by means of a wall (144 or 244) in the vicinity of the two wiper blade ends.

5. The wiper blade according to claim 4, characterized in that the wall (144) is aligned essentially perpendicular to the support element (12).

6. The wiper blade according to claim 4, characterized in that the outside (246) of the wall (244) encloses an acute angle (α) with the support element (12).

7. The wiper blade according to claim 4, characterized in that the wall (144 or 244) is provided with a recess (146 or 246) that is open at the edge oriented toward the window (22) and the width (148) of this recess is greater than the width (150) of the wiper strip (14) in the vicinity of the support element and its depth (152) reaches to the upper band surface (11) of the support element (12).

8. The wiper blade according to claim 1, characterized in that the free leg ends (50, 52) of the wind deflection strip (42, 142, or 242) are attached to the wiper blade (10).

9. The wiper blade according to claim 1, characterized in that the free leg ends (50, 52) of the wind deflection strip (42, 142, or 242) are glued to the wiper blade (10).

10. The wiper blade according to claim 1, characterized in that the free leg ends (50, 52) of the wind deflection strip (42, 142, or 242) are attached, preferably glued, to the support element (12) of the wiper blade (10).

11. The wiper blade according to claim 1, characterized in that the free leg ends (50, 52) of the wind deflection strip (42, 142, or 242), at least in sections, are provided with claw-like projections (56, 58), which suitably encompass the mutually opposed outer edge strips (36) of the support element (12).

12. The wiper blade according to claim 11, characterized in that the claw-like projections extend from the leg ends (50, 52) into the vicinity of the wall (154 or 254), and suitably encompass end regions (112) of the support element (12).

13. The wiper blade according to claim 11, characterized in that the glued attachment is produced in the vicinity of the claw-like projections (56, 58).

14. The wiper blade according to claim 11, characterized in that the claw surfaces (60) resting against the upper band surface (11) of the support element (12) have a greater width (62) than the claw surfaces (64) engaging the lower band side (13).

15. The wiper blade according to claim 1, characterized in that attack surface (54) of the wind deflection strip (42, 142, or 242) is embodied as a flute on the outer wall of the one leg (44).

16. The wiper blade according to claim 2, characterized in that the end caps (38) are provided with a flute (68), which extends in the projection of the flute of the attack surface (54) of the wind deflection strip.

17. The wiper blade according to claim 2, characterized in that the wiper blade part (15) of the connecting device is provided with a flute (70), which extends in the projection of the flute of the attack surface (54) of the wind deflection strip (42).

18. The wiper blade according to claim 1, characterized in that the hardness of the material for the wind deflection strip (42) is at most 40 percent greater than the hardness of the material for the wiper strip (14).

19. The wiper blade according to claim 1, characterized in that the hardness of the material for the wind deflection strip (42, 142, or 242) is at most 20 percent greater than the hardness of the material for the wiper strip (14).

20. The wiper blade according to claim 1, characterized in that the wiper strip (14) has a Shore hardness A of between 64 and 71, in particular 68, and the wind deflection strip (42) has a Shore hardness A of between 70 and 78, in particular 72.